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EXAMINER	
PURINTON, BROOKE J	

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2881	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,211	BIJVOET ET AL.	
	Examiner	Art Unit	
	Brooke Purinton	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/24/2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/24/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, filed 2/24/2009, with respect to claim 1-39 have been considered.

Regarding applicants request for documentary evidence to back up the official notice given below: please see amended rejection of claims 18-20.

Regarding the argument that the clamper of Sato 63 because of its "number, alignment and complexity of the separate parts," is not releasably attached to the support, see new rejection below.

Regarding the argument that *automatically* exerting a force on the second side distinguishes the application from the prior art:

The prior art discloses the claimed invention except for this feature. It would have been obvious to one having ordinary skill in the art t the time the invention was made to make this exertion of force automatic, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which as accomplished the same result involves only routine skill in the art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958) (Appellant argued that claims to a permanent mold casting apparatus for molding trunk pistons were allowable over the prior art because the claimed invention combined "old permanent-mold structures together with a timer and solenoid which automatically actuates the known pressure valve system to release the inner core after a predetermined time has elapsed." The court held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.). MPEP 2144.04

Regarding the argument that *dynamically* exerting a force on the second side distinguishes the application from the prior art:

The prior art discloses the claimed invention except for this feature. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make this exertion of force adjustable (i.e. dynamic, see applicants response to office action, stating the force is not dynamic since "the spring compression remains fixed" (page 11)) since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. In re Stevens, 101 USPQ 284.

Regarding the argument that *releasably attaching* something distinguishes it over the prior art:

It has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. Nerwin v. Erlichman, 168 USPQ 177, 179.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 10-12, 14, 15, 24-31, 33-35 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Sato (JP 11040657A) in view of Berringer (USPN6806943) and Araki (2003/0197841)

Regarding Claim 1, Sato teaches a lithographic apparatus (Figure 1) comprising:

an illumination system configured to condition a radiation beam (Figure 1, part 2);

a support constructed to support a patterning device (Figure 1, part 4 supports part 3), the patterning device being constructed and arranged to impart the radiation beam with a pattern in its cross-section to form a patterned radiation beam ("reticle" abstract), wherein the support is arranged to subject, at least when the support is accelerated, a first side of the patterning device to at least one first force normal to the direction of the acceleration so that an acceleration of the patterning device with respect to the support is counteracted by frictional forces occurring at a contact area between the patterning device and the support (Figure 2, pressurizing device 70a-70c), wherein the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force, at least when the support is accelerated (Figure 2, clamper 63).

Sato fails to explicitly teach wherein the clamping device is arranged to automatically and dynamically subject a second side of the patterning device to at least one force.

Berringer teaches wherein a clamping device for a mask is arranged to automatically subject a side of the mask to at least one force (8, 64-9,22).

Modification would have entailed using the same basic principles of Berringer to automate the apparatus of Sato in a similar fashion.

It would have been obvious to make such a modification because Berringer discloses that automation is an alternative to manually doing something (9, 7-12) and it would have allowed more flexibility in the mask clamping process to be able to either proceed manually (if the operator had a certain goal) or automatically (when efficiency and precision that can be achieved with machine automation is needed).

Araki teaches wherein a clamping device for a mask is arranged to dynamically subject a side of the mask to at least one force ([156]-[158]).

Modification would have entailed using the same basic principles of Araki to dynamically operate the apparatus of Sato in a similar fashion.

It would have been obvious to make such a modification because allowing a different amount of holding force based on a sent current signal as described by Araki in [156] will enable a reticle clamp to exert only the force needed, or deemed necessary by the operator/machinery and will save energy as well as forgo damaging the reticle by excessive force.

Regarding Claim 24, Sato et al. teach a device manufacturing method comprising: transferring a pattern from a patterning device onto a substrate wherein the method comprises supporting the patterning device using a support (Figure 1, parts 3/4); accelerating the support (Figure 1, part 3, direction RR); subjecting a first side of the patterning device to at least one first force normal to the direction of the acceleration so that an acceleration of the patterning device with respect to the support is suppressed by frictional forces occurring at a contact area between the patterning device and the support (Figure 2, pressurizing device, 70a-70c); and subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated (Figure 2, clamper 63).

Sato fails to explicitly teach automatically and dynamically subjecting a second side of the patterning device to at least one force.

Berringer teaches wherein a clamping device for a mask is arranged to automatically subject a side of the mask to at least one force (8, 64-9,22).

Modification would have entailed using the same basic principles of Berringer to automate the apparatus of Sato in a similar fashion.

It would have been obvious to make such a modification because Berringer discloses that automation is an alternative to manually doing something (9, 7-12) and it would have allowed more flexibility in the mask clamping process to be able to either proceed manually (if the operator had a certain goal) or automatically (when efficiency and precision that can be achieved with machine automation is needed).

Araki teaches wherein a clamping device for a mask is arranged to dynamically subject a side of the mask to at least one force ([156]-[158]).

Modification would have entailed using the same basic principles of Araki to dynamically operate the apparatus of Sato in a similar fashion.

It would have been obvious to make such a modification because allowing a different amount of holding force based on a sent current signal as described by Araki in [156] will enable a reticle clamp to exert only the force needed, or deemed necessary by the operator/machinery and will save energy as well as forgo damaging the reticle by excessive force.

Regarding Claim 28, Sato, Berringer and Araki teach a method according to claim 24, Sato further teaches wherein the method comprises exerting the at least one force actively (Figure 3a/b, 66 motor means are actively providing force).

Regarding Claim 29, Sato, Berringer and Araki teach a a method according to claim 24, Sato further teaches wherein the method comprises exerting the at least one force passively (Figure 4, part 72).

Regarding Claims 2 and 25, Sato, Araki, and Berringer teach a lithographic apparatus/method according to claim 1/24, Sato further teaches wherein the first and second side of the patterning device are situated substantially opposite each other (see Figure 2).

Regarding Claims 3 and 26, Sato, Araki, and Berringer teach a lithographic apparatus/method according to claim 1/24, Sato further teaches wherein the clamping device is arranged to provide the at least one second force substantially coinciding with the at least one first force (Figure 2a/b).

Regarding Claims 4 and 27, Sato, Araki, and Berringer teach a lithographic apparatus/method according to claim 1/24, Sato further teaches wherein the clamping device is arranged to provide the at least one second force while minimizing areas of contact of which frictional forces can act between the clamping device and the patterning device when the patterning device is accelerated with respect to the clamping device (see part 63 of Figure 3a, where the pole piece touching the substrate with the least amount of contact area).

Regarding Claim 5, Sato, Araki, and Berringer teach a lithographic apparatus according to claim 1, wherein the clamping devices arranged to exert the at least one second force actively (Figure 3a, motor 66 actively puts clamping force on patterning device).

Regarding Claim 6, Sato, Araki, and Berringer teach a lithographic apparatus according to claim 1, Sato further teaches wherein the clamping device is arranged to exert the at least one second force passively (Figure 4, spring 72, passively puts clamping force on patterning device, also see paragraph [0014]).

Regarding Claims 7 and 30, Sato, Araki, and Berringer teach a lithographic apparatus/method according to claim 1/24, Sato further teaches wherein the clamping device is removable/movable (Figure 3a).

Regarding Claims 8 and 31, Sato teaches a lithographic apparatus/method according to claim 7/24,

He teaches where the reticle actively connects to the support (Figure 2, using vacuum pressure 30).

He fails to explicitly state whether the clamping devices is actively or passively connectable to the support.

Ataki et al. also teach various methods for actively connecting the reticle to the supports (magnetic clamps in Figure 15, piezoelectric elements in Figure 26).

Either actively or passively connecting the reticle to the supports would solve the problem of not having an attachment between the reticle and the supports.

It would have been obvious to use an active connection between the clamp and the support since active connections are known in the art. Substituting an active support for a passive support would have allowed more control over removal of the clamp or moving of the clamp, and would have yielded predictable results of providing stable support for the clamping device. Additionally, active support would have allowed a better backup system and perhaps more knowledge prior to failure, which could be harder if there was a passive support (such as a screw, which could come loose without the knowledge of the technician, as opposed to a vacuum type support, upon imminent loss of which, the control system could notify the technician).

Regarding Claims 10 and 33, Sato, Araki, and Berringer teach a lithographic apparatus/method according to claim 1/24, Sato further teaches wherein the clamping device is connected to the support (Figure 3a).

Regarding Claims 11 and 34, Sato teaches a lithographic apparatus/method according to claim 10/33.

Sato fails to explicitly state wherein the clamping device is arranged to dynamically exert the at least one second force when the support is being accelerated.

Araki et al. teach wherein the clamping device is arranged to dynamically exert the at least one second force when the support is being accelerated (8, [0139] and 17, [0243]).

Having the clamping device arranged to dynamically exert the at least one second force during the support acceleration would solve the problem of pieces moving relative to each other, as well as over use of energy.

It would have been obvious to one of ordinary skill to only use the force sufficient to keep the reticle on the reticle holder without excessive force since excessive force can have negative effects on the reticle, as well as consumes more energy than necessary, and is inefficient. Using the minimum amount of

energy would yield the predictable results of keeping the reticle stable without wasting energy or affecting the reticle negatively.

Regarding Claims 12 and 35, Sato and Ataki et al. teach a lithographic apparatus/method according to claim 11/34.

Sato fails to explicitly state wherein the clamping device comprises at least one configured to dynamically exert by its inertia the at least one second force.

Araki et al. teach wherein the clamping device comprises at least one mass which accelerates differently with respect to an acceleration of the support, each mass thereby capable of generating/negating a force that is transmissible for exerting the at least one second force (Figure 22/23, where since the reticle 400 is not directly connected to the holder/clamp of this embodiment of Ataki et al. it would be evident that there could be slight differences in acceleration between the two parts).

Making the lithographic apparatus of Sato and Araki et al. further comprise the clamping device comprising at least one mass which accelerates differently with respect to an acceleration of the support, each mass thereby capable of generating/negating a force that is transmissible for exerting the at least one second force would solve the problem of thermal overheating.

Araki teaches wherein a clamping device for a mask is arranged to dynamically subject a side of the mask to at least one force ([156]-[158]).

Modification would have entailed using the same basic principles of Araki to dynamically operate the apparatus of Sato in a similar fashion.

It would have been obvious to make such a modification because allowing a different amount of holding force based on a sent current signal as described by Araki in [156] will enable a reticle clamp to exert only the force needed, or deemed necessary by the operator/machinery and will save energy as well as forgo damaging the reticle by excessive force. Additionally, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato's invention with the spaced apart clamp/holder apparatus of Araki et al. since Araki et al. disclose that this configuration diminishes the thermal contact between 400/410 due to the air flow between the two (from parts 454). This allows "distortion changes caused by the mask warping due to the thermal shape distortion of the mask holder

410, as well as offset and rotation due to mis-positioning of the mask 400" to be "controlled to a satisfactory level, thus enabling accurate and stable projection exposures to be performed," ([0184]). Modification would yield predictable results of allowing less thermal warping and better control.

Regarding Claims 14 and 37, Sato teaches a lithographic apparatus/method according to claim 1/24.

He fails to teach wherein the clamping device is arranged to abut the support.

Ataki et al. teach wherein the clamping device is arranged to abut the support (Figure 15, where 282 a and 280 share a common boundary).

Arranging the clamping device arranged to abut the support would solve the problem of saving space.

It would have been obvious to modify the invention of Sato in the manner of Ataki et al. to have the clamping device abut the support since this would save space. Modification would yield the predictable result of having the same clamping device taking up less space.

Regarding Claims 15 and 38, Sato teaches the lithographic apparatus/method according to claim 1/24.

He fails to explicitly state wherein the lithographic apparatus is provided with a handler for handling the patterning device with respect to the support, wherein the handler is also arranged to handle the clamping device.

Araki et al. teach wherein the lithographic apparatus is provided with a handler for handling the patterning device with respect to the support, wherein the handler is also arranged to handle the clamping device (correction unit 550, [0204]).

Attaching a handler for handling the pattering device and the clamping device would solve the problem of how to control these pieces before, during, or after the patterning process.

It would have been obvious to one of ordinary skill in the art to utilize a way to handle both the patterning device and the clamping device through a control system or computation unit since this allows more control over the patterning process, and in the case of Ataki et al., allows quick correction for any detected reticle movement. Modification would have yielded the predictable results of allowing more control and shorter error response time.

Claims 16, 17, 21-23 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Sato (JP 11040657A) in view of Yuan et al. (20040046947) and Laganza et al. (5727685).

Regarding Claim 16, Sato teaches a support constructed to support a patterning device which is capable of imparting a radiation beam with a pattern in its cross-section to form a patterned radiation beam (Figure 1); wherein the support is arranged to subject, at least when the support is accelerated, a first side of the patterning device to a clamping force (Figure 2) , and wherein the support is associated with a clamping device which is arranged to subject a second side of the patterning device (Figure 2, part 63, on either side), extending in a plane that is non-coinciding with the first side, to an additional clamping force, at least when the support is accelerated (Figure 2, part 63 clamper, on either side).

Sato fails to explicitly teach wherein the clamping device is releasably attached to the support.

Yuan et al. teach a reticle stage (analogous to the clamping device of Sato) attached to the reticle base (analogous to the support of Sato), by resilient isolators (Figure 1, parts 38 and 40 and [45]), thus showing there is a need for attachment means to secure the reticle holder/clamping device to the base.

Laganza et al. teach a reticle container with corner clamping devices that utilizes pins to hold the clamps in place (Figure 2/4a).

Modification would have entailed using a pins or screws to attach the clamping device to the support in the apparatus of Sato, both of which can be removed/unscrewed and are there releasably attached.

It would have been obvious to make such a modification in order to assemble the apparatus in the first place, otherwise the parts would have fallen off.

Regarding Claim 17, Sato, Yuan and Laganza teach a lithographic apparatus according to claim 16, Sato further teaches wherein the first and second side of the patterning device are situated substantially opposite each other (see Figure 2).

Regarding Claim 21, Sato, Yuan and Laganza teach a support according to claim 16, Sato further teaches wherein said clamping device comprises a resilient structure for providing said additional clamping force by push pressure (Figure 4, spring 72).

Regarding Claim 22, Sato, Yuan and Laganza teach a support according to claim 16, Sato further teaches wherein said clamping device comprises a pivoting lever assembly (Figure 3), said lever assembly being pivotable around a pivot (part 62) that is in fixed positional relationship to said support (part 4) and comprising a lever part (part 63) contacting said patterning means so as to provide an additional clamping pressure on said patterning means while being pivoted (Figure 3a, arm is pivoted onto patterning means to provide an additional clamping pressure), and an actuator arranged to pivot said pivoting lever assembly (part 66, motor, discussed in [0027]).

Regarding Claim 23, Sato, Yuan and Laganza teach a support according to claim 16, Sato further teaches wherein said clamping device comprises a pivoting lever assembly (Figure 3), said assembly being pivotable around a pivot (Figure 3, part 62) that is in fixed positional relationship to said support (part 4) and comprising a lever part (part 63) contacting said patterning means so as to provide an additional clamping pressure on said patterning means while being pivoted wherein the assembly comprises an inertial mass element, fixedly connected to the pivoting assembly so as to pivot the assembly during accelerations (Figure 3a, part 65).

Regarding Claim 39, Sato et al. teach method comprising: supporting a patterning device using a support (Figure 3a, part 4); accelerating the support (Figure 1, part RR) subjecting a first side of the patterning device to at least one first force normal to the direction of the acceleration so that an acceleration of the patterning device with respect to the support is suppressed by frictional forces occurring at a contact area between the patterning device and the support (Figure 3a); and subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated (Figure 3a).

Sato fails to explicitly teach wherein the clamping device is releasably attached to the support.

Yuan et al. teach a reticle stage (analogous to the clamping device of Sato) attached to the reticle base (analogous to the support of Sato), by resilient isolators (Figure 1, parts 38 and 40 and [45]), thus showing there is a need for attachment means to secure the reticle holder/clamping device to the base.

Laganza et al. teach a reticle container with corner clamping devices that utilizes pins to hold the clamps in place (Figure 2/4a).

Modification would have entailed using a pins or screws to attach the clamping device to the support in the apparatus of Sato, both of which can be removed/unscrewed and are there releasably attached.

It would have been obvious to make such a modification in order to assemble the apparatus in the first place, otherwise the parts would have fallen off.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato and as applied to claim 16 above and further in view of Guarino (USPN 4711438).

Regarding Claim 18, Sato, Yuan and Laganza teach a support according to claim 16

Sato fails to explicitly teach wherein the clamping device is connected to said support by clamping elements (clamping device 66 connected to 4, figure 3a).

Guarino teaches clamping the clamping device to the clamping device support with clamping elements in order to the clamping device to the support (Figure 2, part between 12 and 21).

It would have been obvious to use clamping elements to support the clamping device since Guarino teaches that it was known in the art that the clamping device would need to be connected to said support by clamping elements (2, 9-10) since friction alone would be insufficient to securely hold the clamping device onto the support (implicit in the fact that Guarino needed an (unspecified) attachment means). Techniques known in the art include passive techniques, such as screws, cement, glue, solder, forming the support and clamp device monolithically, etc. It would have been obvious to one of ordinary skill that Sato would have to have some form of connection in order to utilize the clamping device in a scan type lithography apparatus/method.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato, Araki, Berringer and Guarino as applied to claim 16 above and further in view of Meinel et al. (USPN 4795518).

Regarding Claim 19 Sato, Yuan and Laganza and Guarino teach a support according to claim 18.

Sato teaches where the reticle actively connects to the support via vacuum suction tubes (Figure 2, 30).

He fails to explicitly state whether said clamping elements comprise vacuum suction tubes.

Meinel teaches vacuum suction tubes as a clamping element (Figure 1a/b).

It would have been obvious to use an actively connection between the clamp and the support since active connections are known in the art (as taught by Meinel's vacuum tubes). The clamping elements comprising an active clamping means via vacuum suction tubes and would solve the problem of easily and securely attaching and detaching the clamp from the support. Substituting an active support for a passive support would have allowed more control over removal of the clamp or moving of the clamp, and would have yielded predictable results of providing stable support for the clamping device. Additionally, active support would have allowed a better backup system and perhaps more knowledge prior to failure, which could be harder if there was a passive support (such as a screw, which could come loose without the knowledge of the technician, as opposed to a vacuum type support, upon imminent loss of which, the control system could notify the technician).

Regarding Claim 20, Sato teaches a support according to claim 19, wherein the clamping device is shaped to be connected to said support by clamp fitting (Sato, Figure 3a, 4 has a substantially flat surface, 66 is shown to have a substantially flat bottom).

Claims 9 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato as applied to claims 1 and 24 above, and further in view of Shiraishi (USPAPN 2005/0068512).

Regarding Claims 9 and 32, Sato teaches a lithographic apparatus according to claim 7.

He fails to explicitly state wherein the clamping device is passively connectable to the support.

Shiraishi teaches where a clamping device is passively connectable to a support (Figure 3, screw B1 connecting clamping device 66 into support 62).

Using the passive clamping device in the lithographic apparatus would solve the problem of unfixed portions of the apparatus.

It would have been obvious to use the passive clamping device of Shiraishi in the invention of Sato since using screws and other passive devices (cements, glues, etc.) are well known in the art and would have yielded the predictable results of fixing the clamping device onto the support and stabilizing the structure.

Claims 13 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato as applied to claims 1 and 24 above, and further in view of Meinel et al. (USPN 4795518).

Regarding Claims 13 and 36, Sato teaches a lithographic apparatus/method according to claim 1.

He fails to explicitly state wherein the clamping device is arranged to provide additional contact area for enhancing the frictional forces needed to overcome to cause acceleration of the patterning device relative to the support when the support is accelerated.

Meinel et al. teach wherein the clamping device is arranged to provide additional contact area for enhancing the frictional forces needed to overcome to cause acceleration of the patterning device relative to the support when the support is accelerated ("the compression increases the contact area between the O ring and the package substrate," abstract).

Increasing the contact space between the lithographic apparatus and reticle would allow more frictional forces to hold the reticle and solve the problem of a sliding reticle.

It would have been obvious to use some sort of elastic O ring to modify the apparatus of Sato so that the more pressure between the reticle and the reticle holder there would have been, the more surface area would have been available to create a surface with friction to prevent the reticle from sliding during movement, since Meinel et al. do the same "to prevent lateral movement of the package substrate relative to the O ring," (abstract) analogous to the problem being solved in Sato's invention ([0003]).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brooke Purinton whose telephone number is 571.270.5384. The examiner can normally be reached on Monday - Friday 7h30-5h00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571.272.2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jack I. Berman/
Primary Examiner, Art Unit 2881

Brooke Purinton
Examiner
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